When Barbara Giambastiani Bartlett was Executive Director of the Madison County Historical Society she arranged a study on hop houses, which was completed by Michael A. Tomlan, Director of the Graduate Program in Historic Preservation Planning in the College of Architecture, Art, and Planning at Cornell University. That study lead Tomlan to further investigation from which he wrote Tinged with Gold: Hop Culture in the United States. This book is considered the most comprehensive text on the history and development of this important agricultural crop. The work covers the history of the industry, the growing and harvesting, the groups and individual people involved, and the special structures built for the processing. An overview of the book is provided here with permission from Dr. Tomlan. Tinged with Gold is available at the Madison County Historical Society, 435 Main Street, Oneida NY 13421 315-363-4136.

HOP HOUSES

The New England hop farmers first looked to England for models of kilns to dry hops. "There, rectangular single-story frame buildings, called 'oast houses,' were commonly used to cure hops through the late eighteenth century." (Tomlan, p. 159) The 9 ft. high, 8 ft. wide, and 13 ft. long oast house had three rooms. One room for the collected green hops, one room for cooling the hops, and the oast room which had a brick furnace over which the hops were elevated to dry. (Tomlan, p. 159)

Farmers kept up with developments abroad by reading agricultural literature. In 1818 an American edition of 1802 *The Universal Dictionary of Arts, Sciences, and Literature* by Englishman Abraham Rees was printed. Rees repeatedly compared the similarity of a hop kiln and a malt kiln which had a first floor with a stove and a second story drying floor capped by a low pyramidal roof. The most distinctive feature of the malt and hop kilns was the conical cap invented by the British in 1790. These devices protected the hole in the apex while providing the maximum draft possible. (Tomlan, p 161)

Although there was information on constructing the sophisticated oast house, the early North American kilns were simple. (Tomlan, p 167) The first hops to be dried in a charcoal-fired kiln were cured in Massachusetts in 1791 in Samuel Jaques, Jr.'s hop yard. A Scottish brewer had given Jaques information on European techniques of drying. The next year many more hop growers had built kilns. Remnants of New England kilns do not exist. The kilns of Central New York State architecturally represent the 19th and early 20th C. hop industry in the Northeast.

Israel Thorndike of Beverly, Massachusetts, detailed the construction of a hop kiln for the *American Farmer* in 1836:

"A kiln for drying hops should be at the side of a hill or on rising ground, so that the top should be about nine feet from the bottom, twelve feet square at the top, tapering on all sides to about three an a half feed at the bottom 'in the clear, built up tapering, with stone laid in lime mortar, and plastered with clay from top to bottom with an aperture at the bottom about the size of the mouth of a common oven, for the convenience of putting in the coal, firing it, and regulating it afterwards.

Upon the stones at the top, is placed a sill of four pieces of timber of about eight inches square, and of course about twelve feet long, that being the size of the kiln at the top, upon which you place strips of boards, half inch thick and two inches wide, and within three and a half to four inches of each other, over which you stretch tow or coarse linen cloth, for a bed to place the hops upon, for the purpose of drying, and under which, at the bottom of the kiln, is made a charcoal fire, regulated at the discretion of the man who attends the drying. It will of course be necessary to have a board around the kiln at the top, of about one foot high, to confine the hops in the bed. I think it would be a further improvement o have a covered roof, and open at the sides, to protect the hops in case of rain, while they are drying." (Tomlan, pp. 168-169)

In 1845 Ezra Leland of Morrisville, Madison County described the kilns in his area:

18 ft wide
30 ft long
10 ft high ground floor made often brick or stone
18 inch square holes in the bottom of the 4 walls
8 charcoal fires at the bottom (Tomlan, p. 170)

Although it is unclear exactly when the pyramidal roof form was adopted to aid the draft, Tomlan indicates that information is consistent for 1850.

MADISON COUNTY LED THE NATION

"By 1819 production [of hops] in Madison County had reached such a level that, in response to the demands of growers, the New York legislature passed a law calling for the compulsory inspection and grading of hops, based on a Massachusetts statue enacted a decade earlier." (Tomlan, p. 18) Madison County led in the production of hops until 1835 when Otsego County became the center of production. "In 1876 the New York State legislature passed a bill to regulate the dimensions of the [hop] box." The law "stipulated that the justices of the peace in the towns across the state were to act as inspectors, and it prescribed a number of fees and penalties for violators." (Tomlan, p. 65)

Humulus lupulus

Hops are dioecious. The male and female plans are different. The female plant produces cones (blossoms, fruits) in the late summer. At the base of the leaves of the cone is a yellow, sticky resin called lupulin. Before refrigeration it was the lupulin that acted as a preservative in beer. Today it is the lupulin that gives beer the bitter aftertaste. (For extended preservative purposes, hops were increased in pale ales sent to English colonists in India. Thus the IPA, India Pale Ale.)

Growers preferred unpollinated hops because the "seedless hops" weighed less than the seeded hops. The seed was of no value and added extra weight to shipping and to payment to pickers if paid by the weight. Most hop plants were reproduced vegetatively by rhizomes and runners.

The stem of the plant is a bine (as in woodbine). A bine twines itself whereas a vine has tendrils that attach the stem to a pole as it grows. The hop bine follows the sun around a pole. The bine can grow as much as 12" a day in June and will grow 20 -30 feet in one season after it is established.

Many 18th and 19th C. New England gardens had a hop plant or two for herbal uses such as hop pillows and tea for the soporific effect, and for hop bitters. Hanging the whole bine inside to dry or spreading the blossoms in the air to dry were sufficient drying techniques for home uses of hops, but as the brewery demand increased faster means of drying more hops had to be sought. Growers began building kilns in which to dry the hops, as well as cool, bale, and store the hops.

Most 19th C. hop yards in New York State used 12 - 25 foot hop poles around which 2 - 4 hop rhizomes were planted to grow vertically. The young bines were trained in a clockwise direction around the pole.

The annual Madison County Hop Fest is the Saturday following Madison County's annual Craft Days, which is held the weekend after Labor Day
Madison County Historical Society
435 Main Street Oneida NY
www.mchs1900.org

HOP PICKERS

During the hey-days of hop growing in New York State hop growers increased their labor force by hiring "home pickers" and "city pickers" during the critical hop picking weeks at the end of the summers.

Home pickers came from nearby farms and villages. Home pickers did not usually require boarding and were preferred by the grower because these pickers often returned year after year and could be held more accountable. Hop farmers would often send a wagon around to pick up the home pickers. Sometimes the pickers organized their own transport. The pickers brought their gloves, bonnets, straw hats, beverages, food, and children to the fields.(Tomlan, p. 120)

As the hop industry grew, so did the need for more hop pickers. By 1863 Central New York State hop growers were recruiting pickers from large cities such as Syracuse, Utica, and Albany. In 1878 growers were paying agents as much as fifty cents for each picker recruited. Growers and their agents promised supervision for young women - and the opportunity to meet bachelors! Agents extolled the health benefits of the job as in an earlier article from the *New England Farmer and Gardener's Journal*, "Those who are habitually engaged in hop growing have been so uniformly in good health, as to attract the attention of medical philosophers (.)" (Tomlan, p. 119) City pickers made up about three-quarters of all the field hands involved in the central New York harvest by 1870. (Tomlan, p. 124) One magazine in California urged women to pick hops. "Take a vacation among the hop fields in the gilded early autumn of California. Your days will be made up of dew-exhaled mornings dwindling to the golden point of noon, of afternoons losing their superfluous heat in sunsets flaming in evening summits, and of nights so cordial and sleep-inviting they seem but moments of oblivion." (Tomlan, p.129)

Railroads ran special trains to transport hop pickers. The first passenger train on the mainline of the New York, Ontario and Western Railroad was between Oneida and West Monroe in Oswego County for the sole purpose of bringing hop pickers. (Tomlan, p 121)

The hop farmer supplied room and board to the city pickers for the weeks that they were at the farm. On smaller farms women might stay in the farmhouse and the men would stay in the barn or in an outbuilding fitted for the purpose. Some hop growers built dormitories in the yard or attached to the farmhouse.

In 1878 pickers in southern Oneida County were getting 25 cents per box with board and 40 cents without board. In 1893 in Cooperstown pickers received 40 cents per box with board and 65 cents without board. (Tomlan, p. 126)

Women and children did most of the picking in eastern hop yards. Hop growers liked hiring women and youth because they were considered better pickers then men, and they got paid less. It was also difficult for male members of families to get away from the farm or factory for the entire harvest season.

Young men did the pole pulling and hauling hop boxes, but were in short supply - especially during the Civil War. (Tomlan, p. 119) After picking all day, pickers looked forward to a dinner and entertainment afterward. The highlights of the season were the dances called hops. (Tomlan, p 145)

HOP CULTURE

Hop culture, as defined in Michael A. Tomlan's 1993 comprehensive text Tinged with Gold: Hop Culture in the United States, "includes not only the growth, cultivation, and harvesting of the plant, but also the economic, social, and recreational activities of the people who became involved in the various processes and procedures dealing with the crop. It includes a record of the mechanical inventions, the technical development, and the architectural traditions that shaped hop kilns, hop houses, and hop dryers and coolers in several states." (Tomlan, p. 6)

"Hop culture is important in the history of agriculture because hops were among the first specialty crops to attract widespread interest among enterprising, progressive farmers. Hop growing required an unusually sophisticated understanding of plant science, drying technology, and market economics. Hops are known to have been indigenous to parts of Asia, Europe, and North America. These small cones, growing in clusters along leafy, climbing vines, were sometimes collected for medicinal purposes, but by the time the English colonists came to the New World, hops were valued chiefly as an additive in beer making. In the early nineteenth century, as what was once a modest home activity grew into the beer-making industry, the demand for hops increased dramatically. Hop culture had a profound economic impact on all the regions in which it was cultivated. It brought some growers unheard of wealth almost overnight, while other hop farmers and dealers slid into ruinous debt just as quickly. Meanwhile, hoards of pickers would patronize local shops and stores, providing the equivalent of a Christmas shopping season at the end of the summer." (Tomlan, pp. 5 & 6)

HOP GROWERS

To the grower the most important reason for raising hops was to make a significant amount of money in a short amount of time. As James Fenimore Cooper stated in Reminiscences of Mid-Victorian Cooperstown, "It was the hop that built many of the big farm houses, now abandoned. Many a farmer made the value of his farm out of a single good year's crop" (Tomlan, cover page). Developing a hop business required great expense. The materials required to plant and grow hop plants ranged from hop rhizomes to hop poles. The cost of harvesting included labor and board of hop pickers. Preparing the hops for market required fuel for drying, brimstone, and tendering labor costs. Shipping the baled hops was costly. Weather, plant pests, and dissatisfied pickers could ruin an entire crop.

Raising hops was a labor-intensive, expensive task, yet when the market was anticipated correctly and the processing handled without errors, fortunes were realized, motivating more farmers to attempt the specialty farming.

The difference in hop prices varied greatly from year to year and within the same season. "In the years from 1880 to 1910, hops sold for as little as $.03 per pound and for as much as $1.13 a pound. In the period from 1930 to 1950, the price ranted from $.10 to $.69." "In 1846…the price on the Boston market began at nine and a half cents, ran up to thirty-five cents, and by the end of the year dipped to twenty cents." (Tomlan, p. 89)

Growers with large hop farms not only built kilns to dry their hops, but also built cabins or attached dormitories to their farm houses for the boarding of the seasonal hop pickers.

In the early 1800s brewers visited the hop fields in advance of the harvest "promising farmers reasonable commissions and moderate storage rates if they would consign the sale of their crops. A well-known brewer like Matthew Vassar would be welcomed in the hop regions of central New York as a patron of importance." (Tomlan, p. 90)

"In the late 1840s the volume of production in a number of areas led some of the major growers to realize that more money could be made in trading hops than in growing them." Well-known growers Mortimer L. and Daniel Conger of Waterville, New York, began to deal in hops in 1847. The Congers continued to grow hops in Oneida and Jefferson counties and also bought and sold hops for other growers. William P. Locke and his two brothers established their hop dealership in 1864 in Waterville, and H. W. Tower and Son in 1867, and Charles Terry in 1869. The hop dealers traveled to other states to keep an eye on the markets. Competition among the hop dealer families was so stiff that letters and telegraph messages were sometimes written in code. (Tomlan, pp. 90 -93)
As the middlemen dealers increased, the market became more crowded. As the beer industry grew, brewers from this country and Europe sent agents to Central New York hop yards.. "Factors, merchants who bought and sold hops in their own name and controlled possession of the crop were also seen in the fields." (Tomlan, p. 93)

Growers who contracted their hops received advance money in the spring and in the fall for expenses. Hop agents conspired and used many ploys to take advantage of hop growers in order to lower prices paid. Using agents meant a higher cost to the grower. Growers felt they were taking all the risks in the industry. Hop growers became disenchanted with dealers and tried making contact directly with brewers.

In 1874 hop growers in New York State began to organize. The first Hop Growers' Convention was held in the Waterville area October 16, 1875. Growers met in Norwich for annual conventions and then at Sylvan Beach for the annual picnic, but little movement was made toward unity in negotiations. (Tomlan, p. 100) In 1937 New York growers formed a hop cooperative, appealed to their legislature, and received funding for building cooperative kilns and a commission to study hop diseases. In 1938 Congress passed legislation that included hops among the commodities for marketing agreements. (Tomlan, p. 105)

Growers needed a great increase in labor force during the three weeks of harvest. In 1935 pickers were in such shortage that the governor of Oregon pleaded over the radio for six thousand extra pickers. During World War II prisoners of war were used to pick hops in the Northwest. Pickers were imported from local families and from cities by rail. The crush of extra laborers in some areas caused a ruckus with the local citizens who went as far as to advertise guns to "shoot the tramps." (Tomlan, pp. 110-111)

Two serious hop picker problems facing hop growers were "dirty picking" and dirty tricks. Unskilled hop pickers sometimes picked stems and leaves with the hop blossoms. Rowdiness, petty thefts, and drunkenness by a few hop pickers caused community problems, unsafe working conditions, and damage to the hop yard and hop buildings.